REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 18-36 are pending, Claims 18, 31, and 36 having been amended by way of the present amendment.

In the outstanding Office Action, Claims 18 and 36 were rejected under 35 U.S.C. §112, first paragraph; Claims 18-36 were rejected under 35 U.S.C. §112, second paragraph; Claims 18-36 were rejected under 35 U.S.C. §103(a) as being unpatentable over Shildneck (U.S. Patent No. 3,014,139) in view of Elton et al. (U.S. Patent No. 4,853,565, hereinafter Elton) and Grant (U.S. Patent No. 5,325,008); and Claims 18-36 were rejected under 35 U.S.C. §103(a) as being unpatentable over Shildneck (U.S. Patent No. 3,014,139) in view of Katz (U.S. Patent No. 4,533,789) and Grant (U.S. Patent No. 5,325,008).

In response to the rejection of Claims 18 and 36 under 35 U.S.C. §112, first paragraph and the rejection of Claims 18-36 under 35 U.S.C. §112, second paragraph, independent Claims 18, 31, and 36 have been amended by way of the present amendment to clarify the arrangement of the three layers making up the insulation system. Claims 18, 31, and 36 have been further amended to clarify that the high-voltage cable is inserted in a first slot and a second slot so as to form a continuous full turn of the stator winding. Claims 18-36 are thus believed to comply with 35 U.S.C. § 112, first and second paragraphs, and the outstanding rejections on those bases are believed to have been overcome. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned so that mutually agreeable claim language may be identified. The amendments to Claims 18, 31, and 36 are believed to find clear support in the specification as originally filed (see, e.g., Figure 1), including the claims, and thus add no new matter.

Claims 18-36 were rejected based upon a hypothetical machine having a stator and a stator winding according to the machine in Shildneck, but substituting the stator winding of the machine in Shildneck with the high-voltage cable in Elton and securing the stator windings in the stator slot using the spring members of Grant. Applicants maintain their traversal of this rejection for reasons similar to those set forth in the Amendment filed April 24, 2001 regarding this asserted combination of Shildneck, Elton, and Grant. All of the arguments supporting Applicants' traversal of the rejections set forth in the Amendment filed April 24, 2001 are incorporated herein by reference.

In the Response to Arguments section of the outstanding Office Action, the Examiner rebuts Applicants' argument that Shildneck is not directed to a high-voltage machine. The Office Action asserts that since Shildneck was described in the declaration of Mr. Robert Fenton to operate at voltages from 10kV to 15kV, and because the present specification "defines a high voltage machine as one which operates at voltages in excess of 10kV", Shildneck "can be defined by applicant's own terms as a "high voltage" machine."[1] Applicants' respectfully traverse that the specification "defines a high voltage machine as one which operates at voltages in excess of 10kV." The sentence following the cited passage of the specification clarifies that "[a] typical operating range for the machine according to the invention may be 36 to 800 kV."[2] The present invention is clearly anticipating operation at voltages significantly higher than those achievable by Shildneck, as described in the declaration of Mr. Robert Fenton.

In a further rebuttal, it is asserted in the outstanding Office Action that "Elton clearly intends the insulated conductors for use as windings in a dynamoelectric machine (abstract; c.4, line 50-c.6, line 4; c.8, lines 45-60; Figs 1-6)."[3] Applicants respectfully traverse this characterization of Elton. The cited passages of Elton are clearly directed to bar-type

[1] See Office Action dated February 11, 2002, at numbered paragraph 6, p. 6.
[2] See original specification, at p. 1, lines 15-17.

armature windings as illustrated in cited Figures 1-6. As discussed in the Amendment filed April 24, 2001, Elton is directed to the use of a pyrolyzed glass fiber layer in various applications, one of which is coating an outer surface of a bar-type armature winding as discussed in the cited passages. Another, different application for the pyrolyzed glass fiber layer discussed in Elton is for providing a semiconducting layer of a cable, such as that shown in Figure 7 of Elton. The discussion of the use of the pyrolyzed glass fiber layer in the context of a cable is limited to col. 7, line 12 – col. 7, line 37 of Elton. It is respectfully submitted that Figures 7 and 8 (showing an electrical housing coated with the pyrolyzed glass fiber layer) are merely additional applications for the pyrolyzed glass fiber layer of Elton. The cable shown in Figure 7 of Elton is no more related to the dynamoelectric machine shown in Figures 1-6, than is the electrical housing shown in Figure 8 of Elton.

In another response to the arguments filed in the Amendment filed April 24, 2001, it is asserted in the outstanding Office Action that ". . . Elton's cable winding minimizes the possibilities of corona discharge, maintains resistivity value after impregnation, minimizes voids and maintains uniform and equal electric potential."[4] For the reasons discussed in the previous paragraph, Applicants respectfully submit that the Examiner has mischaracterized the cable in Elton as a winding. Moreover, Applicants have developed arguments in the Amendment filed April 24, 2001 that the cable disclosed in the context of Figure 7 of Elton would be prohibitively stiff for use as a winding of a rotating electric machine. Accordingly, it is respectfully submitted that the combined teachings of Shildneck, Elton, and Grant would not have suggested to one of ordinary skill in the high-voltage rotating machine art that the cable of Figure 7 of Elton could have been used as a winding of a rotating electric machine as is asserted in the outstanding Office Action. Moreover, the outstanding Office Action has not

[3] See Office Action dated February 11, 2002 at numbered paragraph 6, p. 7.
[4] *Id.*

provided any evidence showing a teaching or motivation to combine the asserted prior art references.

In the recent CAFC decision of *In re Lee*, 61 USPQ2d 1430 (CAFC 2002), the court stressed the requirement for basing obviousness rejections on evidence, and not on conclusory statements made by an Examiner to support a rejection:

> When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness.[5]
>
> ...In finding the relevant facts, in assessing the significance of the prior art, and in making the ultimate determination of the issue of obviousness, the Examiner and the Board are presumed to act from [the viewpoint of "the person having ordinary skill in the art to which said subject matter pertains"]. Thus, when they rely on what they assert to be general knowledge to negate patentability, the knowledge must be articulated and placed on the record. The failure to do so is not consistent with either effective administrative procedure or effective judicial review. The board cannot rely on conclusory statements when dealing with particular combinations of prior art and specific claims, but must set forth the rationale on which it relies.[6]

It is respectfully submitted that the rejections set forth in the outstanding Office Action are based on conclusory statements, and not based on evidence as is required to be consistent with the guidance set forth in *In re Lee*.

Claims 18-36 were also rejected based upon a hypothetical machine having a stator and a stator winding according to the machine in Shildneck, but substituting the stator winding of the machine in Shildneck with the high-voltage cable in Katz and securing the stator windings in the stator slot using the spring members of Grant.

Katz is directed to a high-voltage electric power cable. As with many cables used for power transmission, the cable of Katz includes a metallic shield 14, and an outer protective

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[5] *In re Lee*, 61 USPQ2d 1430, 1433 (CAFC 2002).
[6] *Id.* at 1435

jacket 16.[7] It is respectfully submitted that the cable of Katz would be inoperable as a winding of a high-voltage rotating electric machine for at least the following reasons: (1) the presence of the metallic shield 14 would promote the development of eddy currents when subjected to the high magnetic field of a rotating electric machine leading to losses and possibly machine failure; and (2) the gap between the semiconducting layer 13 and the metallic shield 14 created by the helically wrapped elongated strip 15 when exposed to the voltages contemplated by the present invention would lead to the development of stress points that would lead to the degradation of the materials of the cable, and ultimately, cable failure.

The outstanding Office Action asserts the motivation for combining Shildneck and Katz would be to provide a cable that would have the ability to "withstand high temperatures and wide temperature swings."[8] However, there is nothing in Shildneck to indicate a desirability for a winding having different properties than the cable winding disclosed therein. Moreover, as discussed above, Katz is designed for use as a transmission cable, and would be inoperable as a winding of a high-voltage rotating electric machine.

For a proper obviousness rejection based on a combination of references, there must be evidence in the references themselves showing that there was a motivation to combine the references, or from what was known to one of ordinary skill in the art, not merely that it was feasible to combine the references. It is respectfully submitted that there is no evidence (1) of a desirability to modify the winding used in Shildneck, (2) to suggest that the cable described in Katz could be used as a winding in an electric machine nor (3) that one of ordinary skill in the electric machine art would have a reasonable expectation of success if the machine in Shildneck was modified to operate with the cable of Katz.

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[7] See Katz, at col. 4, line 66-col. 5, line 2, and Figure 1.
[8] See Office Action dated February 11, 2002, at numbered paragraph 5, pp. 5-6.

Consequently, the motivation asserted in the outstanding Office Action is unsupported by any evidence indicating that the proposed combination of Shildneck and Katz is desirable or technically feasible. Accordingly, it is respectfully submitted that one of ordinary skill in the electric machine art would not have been motivated to combine the cable in Katz with the machine in Shildneck.

Grant is asserted for its description of using spring members to hold a winding in stator slots. As can be seen in Figure 1, the winding 14 is a "stator bar" (column 4, line 57) and not a cable, and thus, the springs are flat, not in an arc shape, as would be used to support a cable. Aside from the springs, there is nothing in Grant that would cure the above-described deficiencies regarding the proposed combination of Shildneck and Katz. Consequently, it is respectfully submitted that no matter how Shildneck is combined with Katz and Grant, the proposed combination fails to teach or suggest the invention defined by independent Claim 18, as amended, as well as the other pending claims, Claims 19-36.

Consequently, in view of the present amendment, and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 18-36, as amended, is definite and patentably distinguishing over the asserted prior art. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully submitted,

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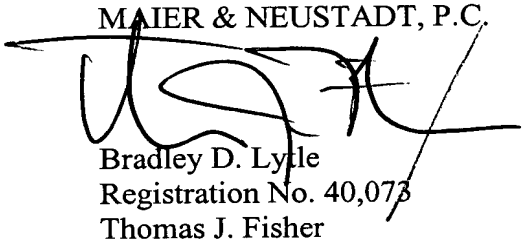

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IN THE CLAIMS

Please amend Claims 18, 31, and 36 as follows:

--18. (Three Times Amended) A method for manufacturing a stator with a stator winding for a rotating electric machine configured to operate at high-voltage, comprising the steps of:

drawing a high-voltage cable having an outer semi-conducting layer through a first slot, and a second slot[, and a third slot] in the stator so as to form a continuous full turn of the stator winding, including

inserting said high-voltage cable through at least one of said first slot, and said second slot[, and said third slot] while a spring member therein being compressed, said at least one of said first slot, and said second slot[, and said third slot] being a supporting slot; and

uncompressing said spring member after said inserting step, wherein

said high-voltage cable having

an insulation system including

an inner semiconducting layer, said inner semiconducting layer constituting an equipotential surface,

a solid insulation layer arranged to surround and be in [electrical] contact with said inner semiconducting layer, and

said outer semiconducting layer, said outer semiconducting layer constituting an equipotential surface and being arranged to surround and be in [electrical] contact with said solid insulation layer.

31. (Three Times Amended) A rotating electric machine configured to operate at high-voltage comprising:

a stator having a slot, and a second slot[, and a third slot];

a winding having a high-voltage cable being drawn through said slot, and said second slot[, and said third slot] so as to form a continuous full turn of said winding, wherein said high-voltage cable having

an insulation system including

an inner semiconducting layer, said inner semiconducting layer constituting an equipotential surface,

a solid insulation layer arranged to surround and be in [electrical] contact with said inner semiconducting layer, and

an outer semiconducting layer, said outer semiconducting layer constituting an equipotential surface and being arranged to surround and be in [electrical] contact with said solid insulation layer; and

a corrugated, laminated plate spring biased against a cable lead-through of said high-voltage cable so as to press against said cable lead-through.

36. (Twice Amended) A rotating electric machine configured to operate at high-voltage comprising:

a stator having a slot, and a second slot[, and a third slot];

a high-voltage winding disposed in said slot, and said second slot[, and said third slot] so as to form a continuous full turn of said high-voltage winding, having

means for conducting an electrical current in said high-voltage winding,

means for electrically insulating said means for conducting, said means for electrically insulating having,

means for creating a first equipotential surface around said means for conducting,

means for creating a second equipotential surface around said means for creating the first equipotential surface, and

means for separating said first equipotential surface from said second equipotential surface; and

means for exerting a pressure against said winding in said slot, and said second slot[, and said third slot].--